Claims

1. A method for detecting a characteristic of at least one object (28, 56, 68), in which

a. optical radiation influenced by the object (28, 56, 68) is fed to an image sensor (6),

b. at least two different partial images (32, 34, 36, 48, 78, 90, 94) consisting of pixels (26) are read out (A_{11}, A_{12}, A_{13}, A_{21}) in succession from the image sensor (6), and values assigned to the pixels (26) are fed to an evaluation unit (10),

c. the characteristic of the object (28, 56, 68) is determined (E_{11}, E_{12}, E_{13}, E_{21}) in each case from the values that are assigned to a partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2), and

d. the partial images (32, 34, 36, 48, 78, 90, 94, T_1, T_2) are combined to form a total image (38) that is output for further processing.

2. The method as claimed in claim 1, characterized in that the determination (E_{11}, E_{12}, E_{13}, E_{21}) of the characteristics from values of a partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2) is performed simultaneously at least in part with the reading-out (A_{11}, A_{12}, A_{13}, A_{21}) of a following partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2).

3. The method as claimed in claim 1 or 2, characterized in that the partial images (32, 34, 36, 48, 78, 90, 94, T_1, T_2) do not overlap one another.

4. The method as claimed in one of the preceding claims, characterized in that the partial images (32, 34, 36, 48, 78, 90, 94, T_1, T_2) are assembled from at least two incoherent pixel areas.

5. The method as claimed in one of the preceding claims, characterized in that the partial images (32,

34, 36, 48, 78) are assembled in each case from a number of completely read-out pixel rows (30, 48a, 48b, 48c, 48d) of the image sensor (6).

6. The method as claimed in one of claims 1 to 4, characterized in that the partial images (90, 94, T_1, T_2) are assembled in each case from a number of only partially read-out pixel rows of the image sensor (6).

7. The method as claimed in claim 5 or 6, characterized in that the pixel rows (30, 48a, 48b, 48c, 48d) of a partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2) are spaced apart from one another in each case by a prescribed number of pixel rows that are not to be read out.

8. The method as claimed in one of claims 5 to 7, characterized in that the read-out sequence of a second partial image (34, 36, 48, 78, 90, 94, T_1, T_2) read out following on from a first partial image (32, 48, 78, 90, 94, T_1, T_2) is offset from the first partial image (32, 48, 78, 90, 94, T_1, T_2) by a pixel row.

9. The method as claimed in one of the preceding claims, characterized in that the partial images (32, 34, 36, 48, 78, 90, 94, T_1, T_2) are read out (A_{11}, A_{12}, A_{13}, A_{21}) in such a time that at least 10 total images (38) per second can be output.

10. The method as claimed in one of the preceding claims, characterized in that a partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2) consists of only so many pixels (26) that the reading-out (A_{11}, A_{12}, A_{13}, A_{21}) of a partial image (32, 34, 36, 48, 78, 90, 94, T_1, T_2) and the determination (E_{11}, E_{12}, E_{13}, E_{21}) of the characteristic can be performed within 10 ms in each case.

11. The method as claimed in one of the preceding claims, characterized in that at least one parameter of the object (28, 56, 68) from the group of

    position, dimension, shape, change in shape, speed of movement, color, brightness, optical reflection behavior of the object (28, 56, 68,)

is determined (E_{11}, E_{12}, E_{13}, E_{21}) as the characteristic.

12. The method as claimed in one of the preceding claims, characterized in that the characteristic is determined (E_{11}, E_{12}, E_{13}, E_{21}) with the aid of a prescription of characteristics.

13. The method as claimed in claim 12, characterized in that the prescription of characteristics is derived from at least one already determined characteristic.

14. The method as claimed in one of the preceding claims, characterized in that the read-out sequence of a partial image (78, 90, 94, T_1, T_2) is controlled with the aid of a characteristic of the object (28, 56, 68) determined (E_{11}, E_{12}, E_{13}, E_{21}) from a preceding partial image (78, 90, 94, T_1, T_2).

15. The method as claimed in one of the preceding claims, characterized in that an appliance (22) is controlled with the aid of at least one value obtained from the characteristic of the object (28, 56, 68).

16. The method as claimed in claim 15, characterized in that an appliance (22) from the group of

    a laser appliance for operating on an eye, an aligning apparatus for positioning the image sensor (6) relative to the position of the object, an optical irradiation apparatus, an apparatus for controlling an electrical parameter, a robot

is controlled.

17. The method as claimed in one of the preceding claims, characterized in that an appliance parameter is regulated in conjunction with at least one value obtained from the characteristic of the object (28, 56, 68,).

18. The method as claimed in one of the preceding claims, characterized in that the variation in the characteristic of the object (28, 56, 68) is displayed by a sequence of total images (38).